

REMARKS

Claims 1, 5, 6, 11, 14, 16, 17, 22, 26, 26 and 32-34 were rejected under 35 U.S.C. § 102(b) as being anticipated by Kuroyone (U.S. patent 5,462,424) and claims 4, 15 and 25 were rejected under 35 U.S.C. § 103(a) as being obvious in light of Kuroyone and Takahashi et al. (U.S. patent 5,299,351). Claims 7-10, 18-21 and 28-31 were objected to as being dependent upon a rejected base claim and deemed allowable if rewritten in independent form with the base and intervening claim limitations.

In response, claims 7 and 9 are hereby amended to be in independent form and to include the limitations of base and intervening claims 1 and 6. The limitation of intervening claim 5 has not been incorporated into amended claims 7 and 9 as it is believed to be non-essential given the comments on page 3 of the Office Action regarding Kuroyone's disclosure of a "progressive punch press". Claim 6 is hereby canceled without prejudice. Claim 18 is hereby amended to include the limitations of claims 11 and 17, but not non-essential intervening claim 16. Claim 17 is hereby canceled without prejudice. Claim 28 is hereby amended to include the limitations of claims 22 and 27, but not non-essential intervening claim 26. Claim 27 is hereby canceled without prejudice. Claim 8 depends from amended claim 7, claim 10 depends from amended claim 9, claims 19-21 depend from amended claim 18 and claims 29-31 depend from amended claim 28. Thus, claims 7-10, 18-21 and 28-31 are believed to now be allowable.

And, claims 1, 11 and 22 (and dependent claims 4- 5, 15-16 and 25-26) are hereby amended to expressly recite the "stepper element" previously introduced by amendment in claims 32-34, which are hereby cancelled. Thus, these claims require that the press controller operate the servo to position the stepper element to change the height of the forming rail in a stepwise manner based on the critical dimension measurement from the sensor.

None of the several prior art references, alone or combined, teach using part dimension data detected by a sensor to adjust the height of a forming rail nor to operate a stepped element to move the forming rail in a step-wise fashion to form a critical dimension of the part, particularly in which the upper die includes a knocker

element that contacts the rail. Reconsideration of the amended claims is thus respectfully requested in light of the following remarks.

Page 3 of the Office Action states that Kuroyone teaches "a stepper element having multiple steps of differing height driven by servo to change height in a step wise manner" referencing cols. 6-7, lines 1-67. Applicants are unable to ascertain from this passage how this reference teaches the claimed method and apparatus with a stepper element providing stepwise movement of the forming rail. The Kuroyone reference teaches only to use servos 128a and 128b to control the pivotal position of guide members 121 and 122 based on readings from part sensors 185 and 186 to change the angle of surfaces 121a and 122. No stepped element is used, nor is the height of the guide member changed at all, nonetheless in stepwise fashion.

Thus, Kuroyone does not teach providing pre-set incremental height positioning of the forming rail as is desired to achieve various predetermined part formations, such as various bend angles, nor the use of an intermediate element between the forming rail and servo that mitigates the effects on the servo of impact to the forming rail.

None of the other references of record fill in the deficiencies of Kuroyone and thus the cited references are therefore believed to be insufficient to render the invention obvious. Applicants respectfully request that this response be entered into the application and that the application be allowed to issue.

Applicants have previously paid for 3 independent claims. The amended claim set now includes 7 independent claims (claims 1, 7, 9, 11, 18, 22 and 28). Please charge the \$336.00 fee for the four additional independent claims now pending, along with and any other fees deemed necessary, to Deposit Account No. 17-0055.

Respectfully submitted,

Ronald A. Modesto, et al.

By: 

Steven J. Wietrzny

Reg. No. 44,402

Attorney for Applicant

Quarles & Brady LLP

411 East Wisconsin Avenue

Milwaukee, WI 53202

(414) 277-5415